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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,864

05/18/2006

Hai-il Ryu

45401-003US1

3836

69713 7590 05/26/2009  
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EXAMINER

HEINCER, LIAM J

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

05/26/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

INFO@ORTPATENT.COM

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,864	<b>Applicant(s)</b> RYU, HAI-IL	
	<b>Examiner</b> Liam J. Heincer	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 1 and 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/15/09</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed January 15, 2009 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Specification***

The abstract of the disclosure is objected to because the abstract contains more than 230 words. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: Paragraph 13 of the original specification contains a typo such that the word "used" is spelled "sued".

Appropriate correction is required.

### ***Claim Objections***

Claims 1, 2, and 5 are objected to because of the following informalities: claim 1 contains a typo such that it reads "the mixtures" rather than "a mixture". In claim 2 the ampersand symbols should be replaced by the word "and". Claim 5 contains the acronym "MDF" without defining the acronym.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Considering Claim 5: Claim 5 contains two distinct methods for producing the functional cornstalk board. One method is a process comprising two steps, while the second method is a process consisting of eleven steps. As the second method does not contain the curing agent addition step of the first method, the methods do not overlap in scope. It is unclear which method is being claimed in the claim. For the purpose of further examination, the broader first method will be examined in order to give the claims the broadest reasonable interpretation.

Additionally, the second method contains "etc." at the end of the list of process steps. As the transitional phrase consisting of is closed and the word etc. opens the method to additional steps, the presence of the word etc. renders the scope of the claim indefinite. It is unclear whether the claim is closed or open ended.

Considering Claim 6: Claim 6 omits essential components from the specification, namely cornstalk and binder or silicate. For the purpose of further examination the claim will be interpreted as requiring cornstalk and a binder or silicate.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 6 recites the broad recitation “phosphoric acid flame retardant”, and the claim also recites “such as triethylphosphate, etc.” which is the narrower statement of the range/limitation.

Claim 6 also recites the broad recitation “halide-including flame retardant”, and the claim also recites “such as bromotriallylphosphate, etc.” which is the narrower statement of the range/limitation.

Claim 6 also recites the broad recitation “sulfur-including flame retardant”, and the claim also recites “such as sulfamic, etc.” which is the narrower statement of the range/limitation.

Claim 6 also recites the broad recitation “inorganic flame retardant”, and the claim also recites “such as ammonium borate, phosphoric acid, sodium silicate, calcium carbonate, titanium oxide, etc.” which is the narrower statement of the range/limitation.

Claim 6 also recites the broad recitation “electromagnetic shielding component”, and the claim also recites “such as alkaline metal salts, alkaline earth metal salts, graphite, activated carbon, carbon fibers, etc.” which is the narrower statement of the range/limitation.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Yu (KR 2003-0093057). Note: A machine translation is being used for KR 2003-0093057 and all citations will be directed towards the citation.

Considering Claim 1: Yu teaches a cornstalk product comprising a curing agent in weight of 0.3 parts with 2 parts of resin and 10 parts of cornstalk (Embodiment 6). 0.3

parts of curing agent per 12 parts of cornstalk and binder is equal to 2.5 parts per 100 parts.

Considering Claim 2: Yu teaches binder as being melamine formaldehyde, urea-formaldehyde, phenol-formaldehyde, vinyl acrylate, vinyl acetate or EVA (Embodiment 6).

Considering Claim 3: Yu teaches the curing agent as being ammonium chloride, magnesium chloride, aluminum chloride or ammonium phosphate (Claim 4).

Considering Claims 4 and 5: Yu teaches a method comprising mixed pulverized cornstalk with a binder; adding curing agent; then molding the material at 210 °C and a pressure of 12 ton/cm<sup>2</sup> (12,000 kgf/cm<sup>3</sup>) for 8 minutes (Embodiment 6). Yu teaches using a semiautomatic or multistage heat press (Claim 3).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu (KR 2003-0093057) in view of Perlus et al. (US Pat. 3,840,388). Note: A machine translation is being used for KR 2003-0093057 and all citations will be directed towards the citation.

Considering Claim 6: Yu teaches a cornstalk product comprising a curing agent in weight of 0.3 parts with 2 parts of resin and 10 parts of cornstalk (Embodiment 6). 0.3 parts of curing agent per 12 parts of cornstalk and binder is equal to 2.5 parts per 100 parts.

Yu et al. does not teach adding the claimed additives to the composition. However, Perlus et al. teaches adding a mixture of ammonium sulfamate/a sulfur

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containing flame retardant, ammonium phosphate/an inorganic flame retardant comprising a phosphoric acid, zinc chloride/a halogen containing flame retardant and sodium borate/an inorganic flame retardant and alkaline metal salt to a lignocellulosic composite (Claim 7). Yu et al. and Perlus et al. are analogous art as they are concerned with the same field of endeavor, namely the production of lignocellulosic composite boards. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the flame retardants of Perlus et al. in the composite of Yu, and the motivation to do so would have been, as Perlus et al. suggests, to increase the fire resistance of the board (Claim 7).

Yu et al. does not teach the claimed amounts of the additives. However, differences in concentration generally will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical. See MPEP § 2144.05. As Perlus et al. teaches that the amount of flame retardant affects the flame spread rating of the board (4:45-56), a person having ordinary skill in the art at the time of invention would consider the amount of flame retardant to be a result effective variable. As such, a person having ordinary skill in the art at the time of invention would have found it obvious to optimize the amount of flame retardant through routine optimization, and the motivation to do so would have been to optimize the flame spread rating of the composite board.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/

LJH

Supervisory Patent Examiner, Art Unit 1796

May 11, 2009